Gulf of Mexico Region

[Harry Luton prepared the following written version of his presentation following the conference.]

Where We're At: Social and Economic Studies in the Gulf of Mexico Region

INTRODUCTION: Like the conference, my paper is dedicated to the memory of Dr. John Peterson, who served on the OCS Scientific Committee from 1990 to 1992. If I were a poet, I would speak of his intelligence, humor, and thoughtfulness.

I am here to describe the social and economics portion of the Gulf of Mexico Region's (GOMR) Environmental Studies Program (ESP). I will give some background, but will focus on what we are doing now. Years ago, the idea of "watershed events" was popular among American historians. The river of history flows one way until an event alters the landscape and changes its direction. The shift may be subtle, but the stream eventually becomes powerful.

THE NEW EMPHASIS ON SOCIOECONOMICS: Two events marked a watershed for the GOMR's social and economic research program. In 1992, the National Research Council (NRC 1992c) published a review of the ESP's socioeconomic research and the GOMR held a social science research agenda-setting workshop (Gramling and Laska 1993). MMS' headquarters initiated the NRC review, while the workshop was planned by the GOMR. Both were motivated by a perceived need to improve the socioeconomic portion of the ESP.

Prior to 1992, MMS had prepared little socioeconomic research except in the Alaska region. The basic reason arose from the applied nature of the ESP and from the National Environmental Policy Act (NEPA). The law directs agencies to use a "scoping" process to aim environmental assessments at issues of public concern. MMS "applies" studies to specific issues that worry the public. Socioeconomic issues were not high on the public's list of concerns. Early in the program, people worried about oil spills, charismatic fauna like whales and dolphins, and about the effects of drilling discharges. The ESP reflected these concerns; research dollars went to oceanography, oil spill modeling, fates and effects, whales, fish, and birds. This process naturally created some institutional inertia. The studies program was staffed to run biological and physical studies. Middle management got comfortable and the available funds were committed.

Beyond this comfort level, the ESP's "applied" nature raised another issue. Social and economic effects occur mostly on land where MMS lacks statutory authority. Upper management wondered what social science could contribute to MMS' decision-making process. They asked themselves, "Why open this new can of worms when MMS does not regulate it and the courts do not require it?"

Management's attitude also changed because of the ESP's applied nature. As the OCS program progressed, MMS, its advisors, and critics began to realize that most of the program's effects occurred on land and were social and economic in nature. By the 1990's, the states of Louisiana and Texas were raising socioeconomic issues. They complained that they carried the program's burdens while receiving an inadequate share of its benefits. Louisiana even sued to stop a sale over such issues. This was a wake-up call to MMS. It was also the kind of "applied", policy-related question that the ESP had been designed to address.

THE NRC REVIEW: The NRC contract was partly in response to this new research need. MMS requested a review of each ESP discipline area: oceanography (NRC 1992a), ecology (NRC 1992b), and socioeconomics (NRC 1992c). The NRC also provided a balanced, seldom-cited summary of the three volumes (NRC 1993). For each discipline area, the contract called for an assessment of the adequacy of the available literature and a discussion of research to address identified inadequacies. The agency expected a critical socioeconomics volume since the NRC had already judged as inadequate the socioeconomic sections of three previous MMS environmental impact assessments (NRC 1989).

The NRC's socioeconomic review volume was critical. The NRC found that the ESP had failed to address many topics standard to socioeconomic impact assessment. The ESP also failed to address nonstandard topics that were specific to the OCS program and, when it did address these issues, it often used inappropriate data or data at the wrong level of aggregation. MMS was not surprised by the criticism. It was surprised, though, by the NRC's decision to not provide a socioeconomic literature review linked to needed research. The report argued that the lack of ESP-funded research made this approach impractical. The NRC suggested instead that MMS hold meetings with national and local experts to develop appropriate study plans.

I will note that I believe the NRC made a mistake by not making a recommendation. The oceanography and biology reviews proposed very expensive studies. The exclusion of social science recommendations put this subject at the back of a very long funding line just when the agency was ready to move it forward.

This said, I will discuss what the NRC report did accomplish. In general, its three criticisms (noted above) became driving principles behind a reinvigorated MMS program. In the GOMR, MMS refocused its program. The NRC was particularly critical of the Gulf, noting that offshore oil-and-gas-related activities had occurred in the region for many years, making the Gulf a "natural laboratory" for the study of the industry's effects. The panel argued that the agency's failure to study the region was a lost opportunity to understand, document, and possibly mitigate OCS effects in the GOMR and elsewhere.

The "natural laboratory" analogy made sense. The oil and gas industry has been in the GOMR for a hundred years and has been involved offshore for the past fifty. Over 200,000 wells have been drilled in Louisiana since 1901 and even more have been drilled in Texas. Since 1947, when offshore work began, 50,000 wells have been drilled in the Gulf of Mexico. The oil and gas industry is extensive and is an integral part of the region's economy.

Offshore work requires a large and complex onshore support structure, larger than the OCS industry itself. This includes: manufacturing companies, fabrication yards, chemical plants, supply bases, boat and helicopter charters, law and engineering firms, caterers, truckers. In 1992, about 13,000 producing jobs existed as a direct result of OCS activities; 10,800 of these were in Louisiana. In that year, oil and gas companies paid an estimated \$4.16 billion to over 6,600 venders and contractors in support of those OCS activities. In Louisiana, these vendors employed an estimated 55,000 people. While much of the support activity is concentrated in Louisiana, Texas is a center for management, the engineering of offshore platforms and most of the downstream oil and gas activity, such as refining and marketing. The industry's size, geographical spread and uneven distribution, diversity, and complexity are the issues.

The NRC report also raised the issue of cumulative, long-term impacts. Most OCS impacts are manifested in the GOMR. Adjustments have been long-term, 50 to 100 years, and effects cumulative. The industry operates on such a large scale that no one sale contributes significantly to the total.

THE SOCIOECONOMICS WORKSHOP: In 1992, the NRC was preaching to the choir about the need to bring more regional and national experts into the studies planning process. About the time the NRC was issuing its draft socioeconomic review, the GOMR was holding a social science research agenda- setting workshop to do just this. Over three days, the workshop brainstormed to develop a list of possible research topics, divided into groups to flesh out these suggestions, and then met as a whole to discuss and prioritize them. The group made eighteen suggestions, some vastly large, like an assessment of the historical, social and economic impacts of the OCS program on Gulf coast communities, some smaller, like a look at the factors influencing industry restructuring. MMS has been mining these ideas since.

Taken together, the NRC review and the workshop underscored the need for a broad, eclectic, comprehensive approach to the social and economic consequences of the program in the GOMR. It also marked the beginning of the process to define MMS' research interests and to develop a program that addresses them.

CURRENT RESEARCH: Once social science research began to flow, it flowed quickly. About 30 social and economic studies are "active" in the GOMR. That means their contracts are open. Of these, perhaps five should be closed but

have not been because, until recently, MMS was short-staffed and other issues were more pressing.

These 30 ongoing studies are difficult to categorize. They perform many tasks, address many questions, and use many methodologies. Some studies collect baseline information or ferret out public concerns, while others analyze platform accident rates or commuting and migration patterns. Several studies look at historical events or the effects of offshore work on families.

The 30 studies also differ in size. Some are small; a modeling workshop was funded for under \$10,000. While some are expensive. MMS just funded the infrastructure study for half a million dollars. I will discuss all the studies using somewhat arbitrary categories. I would use different ones if I were making different points.

ISSUE IDENTIFICATION: Within the ESP, issues identification divides into two separate processes. The first one identifies issues pertinent to OCS lease stakeholders. The questions asked are: Who are the stakeholders? What do they think? What questions should an environmental impact statement (EIS) address? The other process is more internal to the ESP. This involves the identification of issues to be addressed by MMS funded studies.

Contracted research is a small part of MMS' overall effort to identify stakeholder issues. Under NEPA, the identification of stakeholder issues occurs through such "scoping" efforts as public hearings, consultation with states and federal agencies, and public reviews of draft EISs.

The ESP study plans are developed primarily in consultation with state and federal agencies, from staff reviews, advice of the Scientific Advisory Committee, external reviews like the NRC's, and from workshops. Workshops have become an important tool. Since 1992, we have held a modeling workshop, a deepwater workshop, a North Carolina workshop, and now this one. We have also expanded the Coastal Marine Institute (CMI) by bringing potential researchers into the planning process. Lastly, we have increased our interactions with the Science Advisory Committee.

Table 1 IDENTIFICATION OF ISSUES

- 1. Offshore Petroleum Development and the Comprehensive Planning Process (1992)
- 2. A Socioeconomic and Environmental Issues Analysis of Oil and Gas Activity in the OCS of the Central Gulf of Mexico (1995)

- 3. A Socioeconomic and Environmental Issues Analysis of Oil and Gas Activity in the Outer Continental Shelf of the Eastern Gulf of Mexico
- 4. A Social and Environmental Issues Analysis of Oil and Gas Activity in the Outer Continental Shelf of the Western Gulf of Mexico

Table 1 lists studies related to the identification of stakeholder issues. Workshops are generally not funded as socioeconomic studies and are not listed here. The first study, closed in 1992, addresses the Coastal Zone Planning process (1-1). The next three studies (1-2,3,4) were developed on the advice of the 1992 NRC review and the first research agenda workshop. MMS divided the task by GOM planning area: eastern, western, central gulf. The Central study was closed in 1995. The other two soon will be. They were contracted at different times and used different methodologies. The "focus group" approach used in the eastern Gulf study worked well (1-3).

ECONOMIC EFFECTS AND SOCIOECONOMIC MODELING: Table 2 lists the economic effects studies. Some of the first MMS research involved impact assessment models (see 2-1,2). The early importance of modeling to MMS' research agenda reflects the key role economic and demographic modeling has historically played in the impact assessment field.

The NRC criticized the aggregated data used by early MMS models. These studies labored under a disadvantage though. The Paperwork Reduction Act, passed in the Carter administration, was used during the Reagan administration to curtail government oversight of industry. Basically, at the time, the Office of Management and Budget (OMB) would not approve surveys. Therefore, MMS study requests specifically excluded them.

Table 2 ECONOMIC EFFECTS

- 1. Indicators of the Direct Economic Impacts Due to Oil and Gas Development in the Gulf of Mexico (3 vols.)(1986)
- 2. Analysis of Indicators for Socioeconomic Impacts Due to OCS Oil and Gas Development Activities in the Gulf of Mexico (3 vols.)(1987)
- 3. A Socioeconomic Analysis of the Port Expansion at Port Fourchon, Louisiana
- 4. Socioeconomic Baseline and Projections for Selected Florida Panhandle Communities
- 5. The Social and Economic Consequences of Offshore, OCS-Related Activities in Coastal Alabama

- 6. Deepwater Program: Workshop for Modeling Demographic and Socioeconomic Change in Local Coastal Areas in the Gulf of Mexico Region
- 7. Deepwater Program: Assessing and Monitoring Industry Labor Needs
- 8. Deepwater Program: Benefits and Burdens of OCS Deepwater Activities on Selected Communities and Local Public Institutions
- 9. Deepwater Program: An Analysis of the Socioeconomic Effects of OCS Activities on Ports and Surrounding Areas in the Gulf of Mexico
- 10. Cost Profiles and Cost Functions for Gulf of Mexico Oil and Gas Development Phases for Input-Output Modeling
- 11. An Economic Impact Analysis of OCS Activities on Coastal Louisiana

Not surprisingly, since modeling has been central to impact assessment, modeling is where the watershed in the Gulf's social science studies program first became apparent. It began with the "Socioeconomic Analysis of the Port Expansion at Port Fourchon" (2-3). Port Fourchon is a major support base for deepwater OCS activities. The port director wrote our Regional Director identifying wear and tear on Louisiana Route 1 as a significant onshore effect of offshore development. This two-lane road connects Fourchon with the main highway system. The letter stated that Route 1 was already overburdened by truck traffic and deepwater development was just getting started.

Our Director decided the ESP should address this issue. The study has three parts, one describes the port's development and its deepwater activities, another develops a regional economic model to examine costs and benefits to the parish, and a third looks at the effects of truck traffic on Route 1. Shortly afterwards, the Regional Director suggested similar studies for coastal Alabama and the Florida Panhandle (2-5,6). These were procured separately, and each study uniquely contributes to MMS' upcoming modeling efforts. These three studies, Port Fourchon, Alabama and the Florida Panhandle, represent a move towards regional economic and demographic modeling. Until now, the GOMR has not taken a regional approach. Instead, we estimated a lease sale's effects for the entire region and distributed these effects among subregions. The NRC noted that this could bury local effects of a sale.

Currently, the ESP is conducting a set of studies (see below) to further regional modeling. This effort is coordinated with headquarters. The idea is not to link to the national level but, rather, to develop models that use the same data, assumptions, and techniques when appropriate. A second goal is to improve the data that supports regional models.

We held a Gulf workshop where MMS regional and headquarters staff, researchers on MMS projects, and other experts considered regional modeling within the context of the GOMR program (2-6). This began a series of related studies. "An Analysis of the Socioeconomic Effects of OCS Activities on Ports" (2-9), called the "multi-port study", is developing and assessing regional models for five ports and their commuting areas. Its two research teams are building independent economic and demographic models to project change from 1990 to 2020. They will then test each other's results to see what is gained from the various approaches. The models are also being back-cast from 1990 to 1960 to develop confidence intervals for the projections and to discover what kinds of local events have changed growth outcomes.

The Benefits and Burdens study (2-8) could be put with the baseline studies (below); it is here because it supplies data and analysis for the multi-port study. This study will develop and analyze data on a number of social and economic trends within the port commuting areas.

As noted above, the NRC criticized MMS for relying on data at the wrong level of aggregation. "Assessing and Monitoring Industry Labor Needs" is developing an OMB-approved questionnaire that will collect, at regular intervals, information on oil industry purchases and employment. This study is also important to MMS' modeling effort (2-7).

I will highlight one more study that arose from the coastal Alabama research by Bill Wade (2-5). His work showed how purchases for the oil and gas industry in Alabama significantly differ from those of the rest of the offshore Gulf industry. From this came a study to establish multipliers for the offshore oil industry by water depth (2-10).

TECHNOLOGICAL/ORGANIZATIONAL CHANGE: This area of research was suggested at the 1992 agenda setting workshop. OCS exploration and development can be described as "technology driven." For example, advances in 3-D and 4-D seismic, directional drilling, and subsea completion technologies facilitated the recent expansion into deeper areas of the Gulf. The ESP conducts little research in this area because, within MMS, the Technology Assessment and Research (TAR) unit is responsible for most technology questions. Table 3 lists only the ESP studies related to technological and organizational change within the GOMR oil industry.

Table 3 TECHNOLOGICAL/ORGANIZATIONAL CHANGE

1. Characteristics and Possible Impacts of a Restructured OCS Oil and Gas Industry in the Gulf of Mexico (1995)

- 2. Modeling the Structure and Performance of Integrated and Independent Producers in the Gulf of Mexico OCS (1998)
- 3. Environmental and Safety Risks of an Expanding Role for Independents on the Gulf OCS (1998)
- Forecasting the Number, Type, and General Locations of the Platforms to be Removed, Installed, and Operated on the Gulf of Mexico OCS in the Next 25 Years
- 5. Changing Patterns of Ownership, Control and Access to Resources in the Petroleum Industry: Implications for Leasing and Development in the Gulf
- 6. Deepwater Program: The Technology and Economics of Deepwater Production Projects

The first three studies are completed; the last three are ongoing. These two groups of studies illustrate the industry's unpredictability. The earlier studies address concerns related to big oil companies leaving the Gulf during the 1980s downturn. The agency worried that the switch from the 'majors' to the 'minors' might mean less industry investment in research and development and less emphasis on worker and environmental safety. Study results indicate otherwise. The second three studies address issues raised in the 1990's as the oil industry has moved quickly into the Gulf's deepwater areas.

FISHERIES: Since social impact assessment concerns itself with possible resources use conflicts, fishing was also part of the Gulf's early research. Our very first study addresses sportfishing near rigs (4-1).

Table 4 FISHERIES

- 1. Fishing Offshore Platforms: Central GOM (1984)
- 2. Characterization and Trends of Recreational and Commercial Fishing from the Florida Panhandle (1997)
- Economic Impact of Fishing and Diving Associated with Offshore Oil and Gas Structures
- 4. Boating Uses, Economic Significance, and Information Inventory for North Carolina's Offshore Area, "The Point"
- 5. *Deepwater*. Bluewater Fishing and Deepwater OCS Activity: Interactions Between the Fishing and Petroleum Industries in Deepwaters of the GOM

Just as in California, when the oil industry first moved offshore, Gulf of Mexico fishermen opposed the rigs, fearing interference with fishing or fish. However, platforms soon became foci for many rod and reel fishermen because these structures, like reefs, were habitat to many game fish. Early MMS research (4-1) and non-MMS studies led to the "Rigs-to-Reefs" programs in most of the Gulf states. Under strictly controlled conditions, old platforms are sunk to become hard structures. The economic benefits of rigs as fishing sites iaretaken up by the "economic impact of fishing and diving" study (4-3), an updated approach to a question addressed in MMS' first fisheries study.

Both the study of "the point" (4-4) and of bluewater (4-5) address the traditional environmental assessment issue of possible use conflicts. "The point" is located off North Carolina's Cape Hatteras and is a popular destination for deepwater recreational fishing. It is also the location of a promising OCS lease. The bluewater study looks at possible conflicts between commercial fishermen and oil activities in very deep water in the Gulf.

These two studies illustrate how the region's socioeconomic study program is expanding geographically. While the region always covered a lot of ground, it almost exclusively focused on coastal Louisiana for research. Now the program spreads its attention from the mid-Atlantic to Mexico and into deepwater areas of the Gulf.

BASELINE RESEARCH: I have described maybe half of the program and have tried to provide a sense of where the GOMR's ESP research is and where it is going. In the case of modeling, for example, ongoing studies may not get us to our goal, but they are an important step, and we plan to develop and test our models and questionnaires before we take our next one. We can stand pat.

Table 5 BASELINE DESCRIPTION: GENERAL

- 1. Effects of Offshore Oil and Gas Development: A Current Awareness Bibliography (1994)
- 2. Oil in the Gulf: Past Development, Future Prospects (1995)
- 3. Northeast GOM Coastal and Marine Ecosystem Program: Data Search and Synthesis, Appendix F, Part 2: County Socioeconomic Summaries (1996)
- 4. A Socioeconomic Baseline Study for the Gulf of Mexico, Phase I
- 5. An Assessment of the Historical, Social, and Economic Impacts of OCS Development on Gulf Coast Communities
- 6. The Coastal Division of Industrial Labor Over Time and Space

7. Deepwater Program: OCS-Related Infrastructure in the Gulf of Mexico

Now I will describe the rest of the research. For the purposes of this discussion, I have categorized all studies as "baseline description", something I would not do normally. This categorization does not fit NEPA. NEPA's concept of baseline is simple. One has an existing situation and a proposal. A proposal's effects are any additions or subtractions it makes to the situation, to the "baseline".

However, I want to highlight the NRC's point that the Gulf is a "natural laboratory" for understanding the effects of the OCS oil and gas industry. The NRC is saying that the direct and indirect effects of the oil industry, as well as measures of their magnitude, duration, interactions, causes, and the factors that might mitigate those effects, are all contained in the existing situation. The oil industry's effects are part of the GOMR's baseline.

One implication of this expanded baseline is that the information needed to project the effects of a single Louisiana sale might differ from the information needed to understand those effects, yet both tasks are important to environmental assessment. This issue arose recently. MMS is developing a questionnaire to gather data on the Gulf oil industry (2-7). A major component of the industry is shipbuilding, the fabrication of exploratory rigs. Some fabrication is for export; one does not need to know about it to project the increase in shipbuilding due to Sale 181. However, since shipbuilding for export exists in the Gulf because of the OCS oil industry, one does need to know about it to understand the effects of the program.

This example could be generalized. One may need to answer different questions with different information to project effects than to explain them or to develop mitigations for them. Our projections use county-level data. However, such data is of little use in understanding how industry downturns affect people. For the latter, careful comparisons between communities like Abbeville and Houma may be useful, places close together, ethnically similar, yet with different response histories.

A second implication of the NRC report is that the GOMR's century-long baseline is really complicated. I will use this place, Park City, as a contrast. Lately, I have been reading a body of literature that argues that resource extraction does not lead to economic development. I believe this work is tautological. It only addresses places where mining remained the sole pillar of an economy, not places with mining that did develop. Driving around yesterday, I thought that Park City would make a great case study to illustrate this critique. On one hand, I would develop a history of mining here. It has a trajectory that this literature might predict. Mining goes up, then it goes down, and it leaves some abandoned houses and junk behind. But this is half the story. I would then trace the rise of the tourism industry, show how a changing America created well-healed

recreationists, and how Park City attracted this new industry by marketing itself to skiers. Here, mining would enter the scene again for, just as real mining has unpleasantness, ex mining has a quaintness that helped Park City become a recreational destination and turn little, once-abandoned shacks into upscale residences and businesses. After laying this story out, I would ask which hurts the environment more, a bunch of golf courses in a desert or some spoil piles. I would bet on the golf courses.

My point is that Park City is a nice case study, it could be done. But the Gulf is complicated; to trace the years of external, oil-related inputs into a single community would be a real undertaking. I will use another non-Gulf example to illustrate its complexity. I grew up in Michigan at a time when the auto industry was king. One could have described Michigan through this industry. One could trace the business connections between industrial Detroit and the higher-tech support operations in West Michigan, or the links between the industry, Upper Peninsula ore mining, Chicago, and the Pittsburgh steal works. Such links shaped the regional economy but they shaped politics and culture as well. Michigan was divided into downstate, Democratic, unionized Detroit, a highertech, Republican upstate, and an isolated, depopulated, Democratic Upper Peninsula. The industry influenced Midwest road and transportation systems and higher education. It influenced just about everything. My dad loved talking about his profession, dentistry. After World War II, the United Auto Workers insisted on good dental care for autoworkers. In Grand Rapids, where I grew up, dentists knew they benefited from this increased demand but hated Detroit unions nevertheless.

I would not suggest that we study the effects of the OCS on dentistry, although there may be some. I am saying that the oil industry is to the Gulf as the auto industry is to the Midwest, only the oil industry and its effects are more complicated. First, the oil industry is larger. Everybody wrote about the downturn in Detroit, about the layoffs and how they percolated through society. In the 1980s, when the oil industry went down, many more people lost their jobs even though less was written about it. Gulf oil is the more massive industry, and it is probably more important to the U.S. economy. A whole body of literature examines the relationships between oil price bumps and recessions. Oil is a key to the United States in a way that Detroit never was.

Second, the oil industry is geographically more widespread, it is distributed more unevenly, and the area it covers is far more socially and ethnically diverse. Finally, the composition of the oil industry is more complex. One talks about exploration, development, production, and decommissioning. Each of these phases is composed of hundreds of different activities, conducted by hundreds of different companies that range in size from one-man, single-service operations to the largest multi-nationals in existence. The owner, rig operator, and driller are often different organizations, each with its own subcontractors and suppliers. The NRC's "natural laboratory" is a complex thing.

Table 5 lists studies that would be "baselines" under NEPA. Two are literature reviews (5-1,3). Most have an historical bent (5-2,4,5,7) reflecting the region's decades-long involvement with oil and gas.

The phase 1 baseline (5-4) might be the new watershed's first study. Its intent was to develop a dataset of publicly available information to support future research. This data includes information from 1930 to 1990 and covers all of Florida, Alabama, Mississippi, Louisiana, and Texas counties and parishes.

The assessment of historical, social and economic impacts (5-5) is the baseline, phase 2. It is multidisciplinary research that examines Southern history, trends in publicly available data, and three case studies to identify the consequences of the oil and gas industry and to put them in a wider context of change.

The recently awarded infrastructure study (5-7) will collect information on ports, support facilities, pipelines, oil and gas processing plants, refineries, chemical plants, fabrication and pipe yards, and waste disposal sites. This data will be integrated into MMS' GIS. While MMS maintains records on some of this infrastructure, the last complete collection is a decade old. For this reason, the study will develop some historical data.

COMMUTING AND MIGRATION: The offshore part of the oil industry has an unusual work schedule; workers are at the job site for one to two weeks and then off work for one to two weeks. This poses unique issues and opportunities for workers and their families. It also affects commute-to-work behavior and expands the range of locations directly and indirectly benefited by offshore employment. The GOMR has four ongoing studies that address various facets of this subject.

Table 6 BASELINE: FAMILIES, COMMUTING, MIGRATION

- 1. Social and Economic Impacts of OCS Activity on Families and Individuals
- 2. Commuting, Migration, and Offshore Oil and Gas Extracting
- 3. Deepwater Program: Labor Migration and the Deepwater Oil Industry
- 4. Labor Migration and the Deepwater Oil Industry in Houma

The families study (6-1) is field-based research into how family members adjust to the pattern of intermittent work. While this issue has been addressed in the North Sea for oil and in northern Canada for mining, little research has been done in the Gulf, where this form of labor was developed and has been part of community life for three generations.

The last two studies (6-3,4) are really one larger study. During the most recent upturn in the oil economy in the early 1990s, some shipbuilding yards in southern Louisiana, facing a shortage of local talent, hired foreign skilled labor for entry-level positions. Much of this new labor was Mexican which created enclaves of Spanish speakers in towns unused to outsiders.

"BOOMS" AND "BUSTS": The "boom-bust" model of socioeconomic effects does not fit well the Gulf experience. The model was developed in the Rocky Mountain West to address community-level experiences brought on by the construction phase of large-scale projects in small rural areas. The GOMR has experienced the economic fluctuations of a regionally dominant industry for over a century.

Table 7 BASELINE "BOOM/BUST" STUDIES

- 1. Impacts of Oil Exploration and Production on the Social Institutions of Coastal Louisiana (1993)
- 2. Socioeconomic Impacts of Declining OCS Oil and Gas Activities in the GOM (1993)
- 3. Social and Economic Impacts of Petroleum "Boom and Bust" Cycles (1994)
- 4. Job Loss and Reemployment of Marginal Groups in the Gulf of Mexico Region

The first three studies (7-1,2,3) were built around the "boom-bust" model. The last (7-4) reflects a move towards focusing on the cyclic nature of the oil industry.

CASE STUDIES: Several types of research are categorized as case studies. The first two studies (8-1,2) use census and business data to compare community-level income inequality over time. The Abbeville case study (8-4) developed from these two studies. Abbeville is heavily involved in the oil industry, yet it responded differently from other involved Louisiana towns to fluctuations in the oil market.

Table 8 BASELINE: LOCAL EFFECTS, CASE STUDIES

- 1. Oil and Gas Development and Coastal Income Inequality: A Comparative Analysis (1994)
- 2. Oil and Gas Development and Coastal Income Inequality: A Comparative Analysis at the Place Level

- 3. Labor Demand in the Offshore Oil and Gas Industry: The Louisiana Case
- 4. Sustainable Socioeconomic Development in Oil and Gas Country: A Case Study of Abbeville, Louisiana
- 5. The Lake Barre Oil Spill: Economic and Social Consequences

The Lake Barre study (8-5) is a different kind of case study. It examines the costs and social effects of an oil spill caused by a pipeline leak. This was a "spill of opportunity" in that research was organized quickly in response to an unplanned event.

THE YEAR 2000: Tomorrow's workshop will not seek general advice or a list of studies to be conducted. Instead, we will develop groups of relevant research questions and approaches to answering them. We want a lot of ideas that we can mine for years. We will organize the discussion around three relatively small studies planned for fiscal year 2000 (see Table 9). All of these are scientific "think pieces" that stress literature review and the assessment of issues rather than data gathering and analysis. Each addresses a set of issues that will become important as we try to assimilate the findings of our current research.

Table 9 STUDIES PLANNED FOR FY 2000

- 1. Effects on Local Human Communities of OCS Mineral Extraction in Frontier Areas
- 2. Community Responses to OCS Activities: Approaches to the Comparison of Differences Over Time
- 3. The Reorganization of the Oil Industry: A Review of the Literature

We will take the studies one at a time, discuss the issues they raise, promising leads, and useful research approaches. Later, MMS can worry about how to package these ideas into studies.

NOTE: Responding to the group's next-day discussions, MMS combined the first two studies into one study focused on Florida and also revised the industry study.

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